

WHAT IS CLAIMED IS:

1. A method of regenerating a lowered oxygen binding ability of a hemoglobin-vesicle suspension to be used as an oxygen infusion, comprising:

5 using, as a hemoglobin-vesicle, a phospholipid vesicle which contains the aqueous hemoglobin solution therein and an electron donor in an inner aqueous phase thereof; and

10 irradiating the dispersion solution with light when hemoglobin contained in the vesicle is oxidized into methemoglobin and lose its oxygen biding ability, thereby reducing methemoglobin into hemoglobin to regenerate the oxygen binding ability.

15 2. The method according to claim 1, wherein said electron donor is selected from the group consisting of amino acids, saccharides, alcohols and flavin derivatives.

3. The apparatus for carrying out the method according to claim 1, comprising:

20 blood collecting means for taking blood out of a living body, after the hemoglobin-vesicle defined in claim 1 is intravenously administered to the living body and the oxygen-binding ability of the vesicle is lowered by generation of methemoglobin;

25 isolation means for isolating the hemoglobin- vesicle from the blood obtained by the blood collecting means;

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means for irradiating the vesicle with light in
order to regenerate the oxygen-binding ability of the
hemoglobin-vesicle separated; and

means for returning the hemoglobin-vesicle which
5 has regenerated its oxygen-binding ability into the
living body.